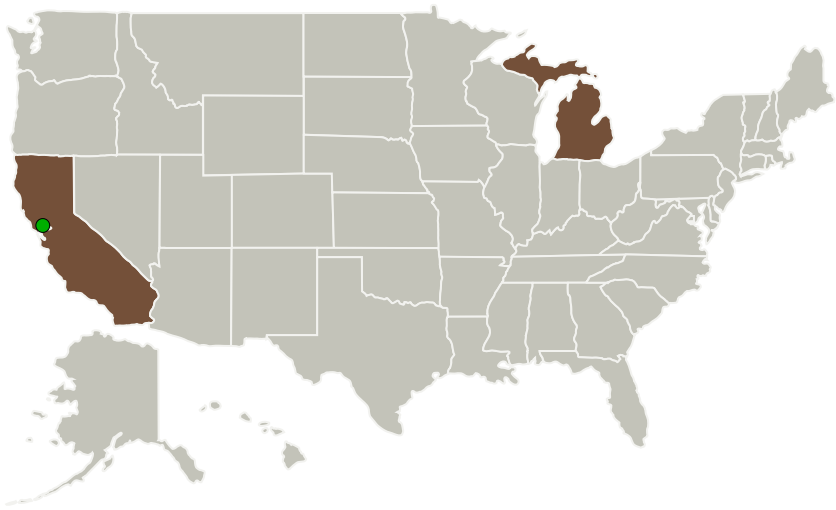
Fiber-Coupled Spectrometer for TPS Materials, Phase II

Completed Technology Project (2011 - 2013)

Project Introduction

EDA, Inc., in partnership with Penn State, has shown previously that the concept of embedding fiber optics within ablative TPS material has merit and should yield a successful implementation of a spectrometer "window" during a Phase-II development program. Optical instrumentation, such as optical spectrometers would provide benchmark data for fundamental flow, radiation, and materials modeling as well as provide operational correlations between vehicle reentry drag and radiation if implemented in a TPS flight test program. Without flight spectral data, and the appropriate modeling efforts, the power of prediction to assist in new heat shield design does not exist for reentry into other planetary atmospheres. This is a severe limitation for future space exploration missions which FiberPlug helps address.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
ElectroDynamic Applications, Inc.	Lead Organization	Industry Minority-Owned Business	Ann Arbor, Michigan
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

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Primary U.S. Work Locations	
California	Michigan

Project Transitions

June 2011: Project Start

May 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138868)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

ElectroDynamic Applications, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

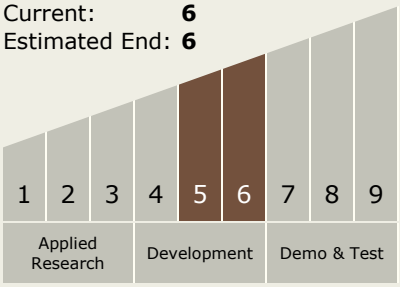
Carlos Torrez

Co-Investigator:

Eric Viges

Technology Maturity (TRL)

Start: **5**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  - TX09.4 Vehicle Systems
    - TX09.4.5 Modeling and Simulation for EDL

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System